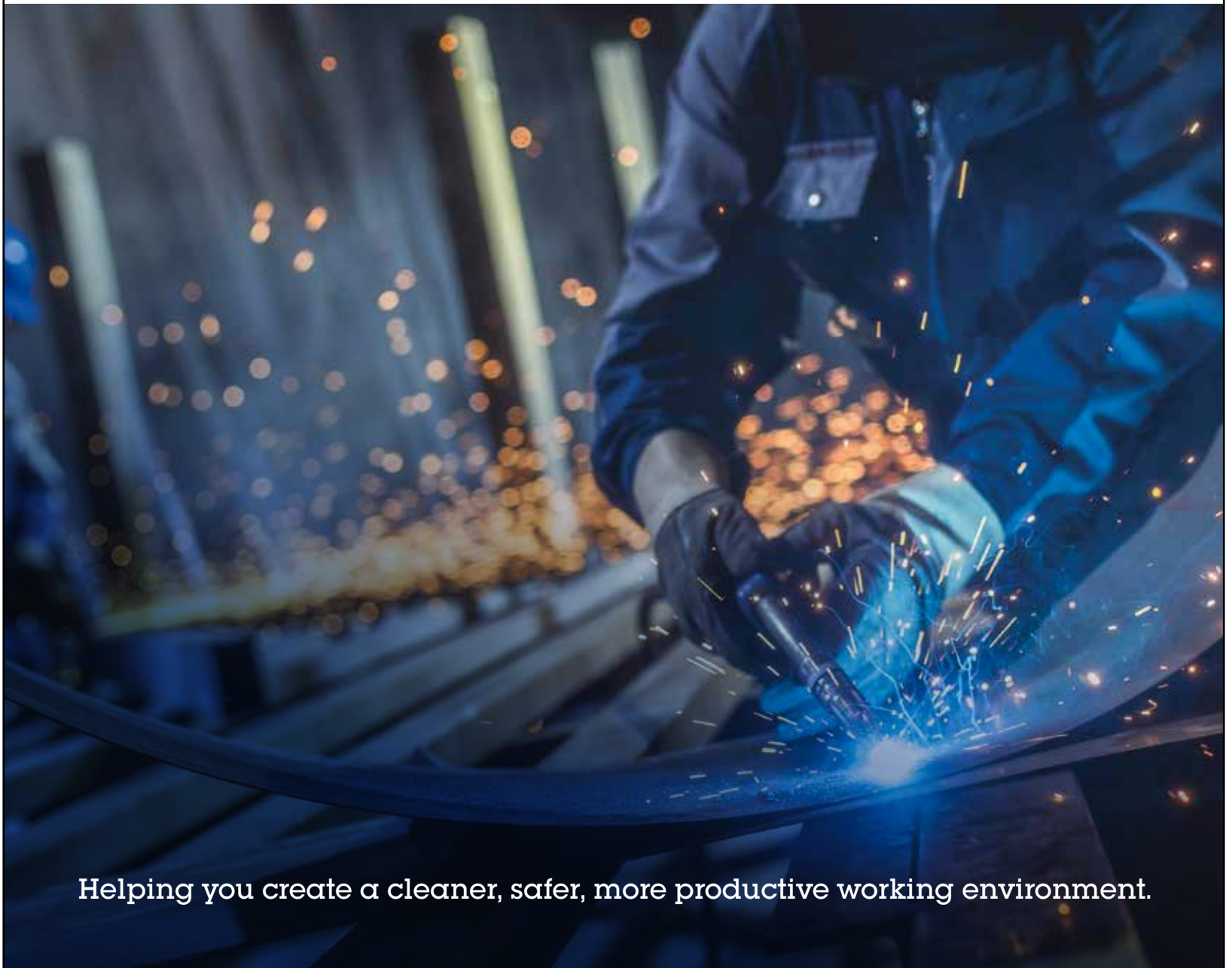




LOW MANGANESE LOW FUME PREMIUM PERFORMANCE

Discover the new **optimized combinations** of our **BLUESHIELD™** filler metals and **ARCAL™** shielding gases



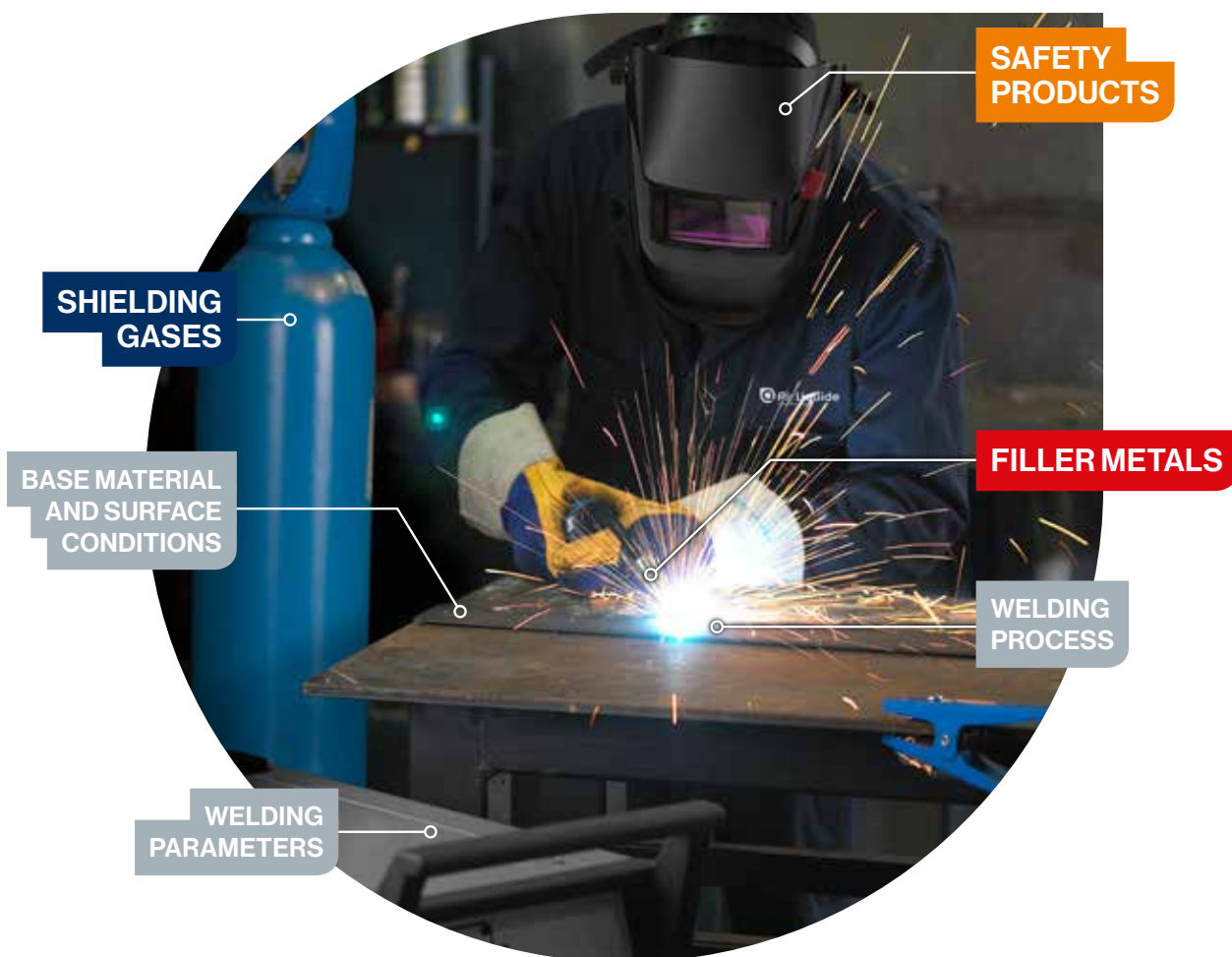
Helping you create a cleaner, safer, more productive working environment.

HOW WE MAKE THE DIFFERENCE

The new standard of excellence in **low manganese** and **low fume** filler metals

Air Liquide has launched a new breed of tubular wires that are Low in manganese while producing lower fume emissions. These new wires are now part of the BLUESHIELD™ product line combined with our optimized shielding gases which deliver exceptional results.

What **influences** the **welding fume**?



DID YOU KNOW?

In recent years, regulatory bodies have enacted more stringent regulations and recommendations regarding the acceptable levels of manganese in welding fume. Several provinces in Canada have reduced their recommended Threshold Limit Value (TLV®) for manganese from 0.2 mg/m³ to 0.1 mg/m³ for inhalable particulate and 0.02 mg/m³ for respirable particulate.

ENGINEERED SOLUTIONS



FLUX-CORED WIRE LA T-91 LMN



ARCAL™ 211

PREMIUM QUALITY

- Low Fume, Low Manganese single-or multi-pass all position flux-cored wire
- Designed to weld carbon steels requiring mechanical properties down to -30°C (-20°F) when using ARCAL™ 211 and Ar/CO₂ shielding gases containing up to 80%Ar/20%CO₂
- Ideal for welding steel grades ASTM A36, A515 Gr. 70, A516 Gr. 70 and other fine grain steels.

- Optimized blend of Argon with controlled additions of CO₂ and He
- Increases travel speed and wetting action
- Delivers the lowest fume emissions
- Increased melt-off rates and lower spatter level resulting in better productivity and decreased overall welding cost
- Superior mechanical properties and optimized bead profile
- The ideal "clean" alternative to standard CO₂ and Ar/CO₂ mixtures
- Create a cleaner, safer, more productive work environment by combining Arcal™ 211 with our low manganese and low fume filler metals

EXCEPTIONAL RESULTS

Up to 88% lower manganese in weld fumes when used with ARCAL™ 211**

- Up to 88% lower manganese in weld fume when used with ARCAL™ 211 as compared to E71T1 with CO₂
- Up to 64% lower manganese in weld fume when used with BLUESHIELD™ 8 as compared to E71T1 with BLUESHIELD™ 8

Up to 80% fume reduction when used with ARCAL™ 211**

- Up to 80% fume reduction when used with ARCAL™ 211 as compared to E71T1 with CO₂
- Up to 46% fume reduction when used with ARCAL™ 211 as compared to E71T1 with BLUESHIELD™ 8

The LA T-91LMN has been created to ensure welder health and safety. Its low manganese levels and low fume generation breaks new ground in consumable performance.

LA T-91LMN TYPICAL CHEMISTRY

WEIGHT %	C	Mn	P	S	Si	Ni
ARCAL™ 211	0.05	0.34	0.006	0.009	0.59	0.49
BLUESHIELD™ 8	0.04	0.37	0.004	0.010	0.56	0.46

**Values based on controlled laboratory testing. Multiple shop process variables can impact results from application to application.

ENGINEERED SOLUTIONS



METAL-CORED WIRE LA C-6 LMN



ARCAL™ M14 (ARCAL™ 14)

FIRST IN ITS CLASS

- Gas shielded, metal-cored arc welding (MCAW) electrode with Low Fume and Low Manganese emissions
- Intended to weld with BLUESHIELD™ 8, ARCAL™ M14 (ARCAL™ 14), ARCAL™ SPEED (ARCAL™ 21), ARCAL™ 211 and certain Ar/CO₂ shielding gas blends ranging from 80Ar/20CO₂ to 92Ar/8CO₂
- Exceptional weldability and sound mechanical properties
- Some of the lowest fume generation rates commercially available in low manganese E70C6M wires as specified and tested per AWS F1.2.
- Well suited for structural steel fabrication, farm implement fabrication and general welding applications when concern for reduced weld fume and manganese emissions is priority.

- Optimized blend of Argon with controlled additions of CO₂ and O₂
- Provides a uniform weld bead and good penetration
- The low oxidation potential of ARCAL™ M14 ensures remarkably low fume levels for increased safety in your work environment
- Minimizes spatter levels with less silicate oxides resulting in reduced post-weld cleaning operations
- ARCAL™ M14 can replace Ar/CO₂ and Ar/O₂ mixtures offering more versatility, efficiency and reducing the overall cost of welding
- Optimized performance on thin to medium thickness steel: 14 gauge to 3/8" (2-10 mm)

EXCEPTIONAL RESULTS

Up to 77% lower manganese in weld fumes when used with ARCAL™ M14 (ARCAL™ 14)**

- Up to 77% lower manganese in weld fume when used with ARCAL™ M14 (ARCAL™ 14) as compared to E70C-6M with 75- 80Ar/Balance CO₂ shielding gas.
- Up to 60% lower manganese in weld fume when used with ARCAL™ M14 (ARCAL™ 14) as compared to E70C-6M with 92Ar/8CO₂ shielding gas.

Up to 88% fume reduction when used with ARCAL™ M14 (ARCAL™ 14)**

- Up to 88% fume reduction when used with ARCAL™ 14 as compared to E70C-6M wires welded with 75-80Ar/Balance CO₂ shielding gas.
- Up to 42% fume reduction as compared to E70C-6M wires with the same shielding gas blend 75-80Ar/Balance CO₂.

To support a healthier and safer environment for welders, the LA C-6 LMN achieves significant reduction in fume generation rates.

LA C-6 LMN TYPICAL CHEMISTRY

WEIGHT %	C	Mn	P	S	Si	Ni
BLUESHIELD™ 8	0.06	0.46	0.006	0.010	0.54	0.38
ARCAL™ SPEED (ARCAL™ 21)	0.06	0.58	0.006	0.011	0.69	0.46
ARCAL™ M14 (ARCAL™ 14)	0.07	0.58	0.006	0.011	0.71	0.43
ARCAL™ 211	0.06	0.47	0.006	0.011	0.57	0.38

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SHIELDING GASES

ITEMS	REFERENCE	SIZE	VOLUME		TYPICAL CYLINDER PRESSURE @ 15°C (70°F)
			M3	SCF	
ARCAL™ 211	A0464284	50 XPR	15.36	554.04	30 380 kPa (4500 psig)
ARCAL™ M14 (ARCAL™ 14)	A0464263	50 XPR	15.23	537.84	

FILLER METALS

ITEMS	REFERENCE	DIAMETER		kg	lb	PACKAGING
		mm	in			
LA T-91 LMN	A1091254	1.14	0.045	15	33	VAC-PACK PLASTIC SPOOL
LA T-91 LMN	A1091255	1.6	1/16	15	33	
LA T-91 LMN-C*	A1126305	1.14	0.045	15	33	
LA T-91 LMN-C*	A1126306	1.6	1/16	15	33	
LA C-6 LMN	A1126307	1.14	0.045	20.4	45	SPOOL
LA C-6 LMN	A1141292	1.3	0.052	20.4	45	
LA C-6 LMN	A1141293	1.6	0.062	20.4	45	

* LA T-91 LMN-C: with 100% CO₂

SAFETY PRODUCTS

ITEMS	REFERENCE	SHADES	FRONT MODULE
ADFLO™ PAPR	A0209959	3, 5, 8-13	Flip
NEDERMAN FUME EXTRACTION	A0279989		



ADFLO™ PAPR WITH SPEEDGLAS™ WELDING HELMET

3M

- Comes with lithium ion battery, high efficiency particulate filter and wide leather belt
- 8" x 4.25" clear visor viewing area
- Auto-Darkening Filter 9100X with 2.1" x 4.2" viewing area
- Shade 5 side filters that increase peripheral vision



NEDERMAN FUME EXTRACTION

Arm length (m)	3
Electric plug	US
Filter cleaning method	One way filter
Frequency (Hz)	60
Power Voltage (V)	120